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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,937	09/23/2003	Paul-Andre Lavoie	2006164-0007	3321

24280 7590 11/03/2006

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EXAMINER	
EASHOO, MARK	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,937	LAVOIE ET AL.	
	Examiner	Art Unit	
	Mark Eashoo, Ph.D.	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30 and 67-74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30 and 67-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2 ea.*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 23-SEP-2003 and 19-FEB-2004 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Accordingly, they have been placed in the application file and the information referred to therein has been considered as to the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-30 and 67-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, claims 1, 15, 16, and 17 recite the limitation "a thin film having a thickness of less than 125 microns". For example, this limitation is inclusive of an extruded sheet having a thickness 0-35 microns which is unsupported by the original disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-16, 67, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Missling et al. (US Pat. 6,589,299).

Missling et al. teaches the basic claimed process of extruding an electrode, comprising: mixing an ionically conductive polymer such as those containing monomers of ethylene oxide, for example polyethylene oxide (4:50-5:40), an active material including vanadium oxides in the range of about 55-80% (4:5-31), an electrolyte salt such as lithium bis(trifluoromethanesulfonyl)imide in an amount of about 3-15% (5:54-6:16 and 3:25-40), less than 5% solvent/plasticizer such as ethylene carbonate, or essentially no solvent/plasticizer (claims 4-5 and 6:15-60), an electrically conductive material such as carbon and graphite in an amount of about 1-10% (4:30-50), in a single screw extruder (6:60-8:60); and extruding an electrode material through a die in the form of a sheet/film (Fig. 1-3 and 10:15-25).

Missling et al. further teaches a final calendered/rolled film thickness of 30-90 microns (12:35-40), but does not teach extruding a film of less than 125 microns thick. Nonetheless, it is well established that where the only difference between the prior art and the claims was a recitation of relative dimensions then the claimed invention is not patentably distinct from the prior art (see MPEP § 2144.04, IV, A-B).

Missling et al. further teaches that the particular amount of electrically conductive material is "understood by the skilled artisan" and "can be any amount that aids in electronic conductivity of the electrode"(4:30-50). As such, it is submitted that the exact ratio and amount of electrically conductive materials would have been optimized through routine experimentation.

Missling et al. does not teach venting volatiles through a vent in an extruder. However, vented extruders are well known in the molding art. At the time of invention a person of ordinary skill in the art would have found it obvious to have used vented volatiles through a vent in an extruder, as commonly practiced in the art, in the process of Missling et al., and would have been motivated to do so in order to avoid bubbles from occurring in the extudate.

Claims 71-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Missling et al. (US Pat. 6,589,299) in view of McAleavey (US Pat. 5,482,587).

Missling et al. teaches the basic claimed process as set forth above regarding claim 1.

Missling et al. does not teach cooling rolls to a temperature of about -5 to -30°C. However, McAleavey teaches cooling rolls to a temperature sufficient to solidify the extrudate(5:10-65 and Figs. 1-3, element 67). It is submitted that process temperatures are result effective variable and routinely determined by routine experimentation and optimization. At the time of invention a person of ordinary skill in the art would have found it obvious to have used cooled rolls to a temperature sufficient to solidify the extrudate, as

taught by McAleavey, in the process of Missling et al., and would have been motivated to do so in order to provide a solidified sheet/film.

Claims 15-30, 68, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Missling et al. (US Pat. 6,589,299).

Missling et al. teaches the basic claimed process of extruding an electrode, comprising: mixing an ionically conductive polymer such as those containing monomers of ethylene oxide, for example polyethylene oxide (4:50-5:40), an active material including vanadium oxides in the range of about 55-80% (4:5-31), an electrolyte salt such as lithium bis(trifluoromethanesulfonyl)imide in an amount of about 3-15% (5:54-6:16 and 3:25-40), less than 5% solvent/plasticizer such as ethylene carbonate, or essentially no solvent/plasticizer (claims 4-5 and 6:15-60), an electrically conductive material such as carbon and graphite in an amount of about 1-10% (4:30-50), in a single screw extruder (6:60-8:60); and extruding an electrode material through a die in the form of a sheet/film (Fig. 1-3 and 10:15-25).

Missling et al. further teaches a final calendered/rolled film thickness of 30-90 microns (12:35-40), but does not teach extruding a film of less than 125 microns thick. Nonetheless, it is well established that where the only difference between the prior art and the claims was a recitation of relative dimensions then the claimed invention is not patentably distinct from the prior art (see MPEP § 2144.04, IV, A-B).

Missling et al. further teaches that the particular amount of electrically conductive material is "understood by the skilled artisan" and "can be any amount that aids in electronic conductivity of the electrode"(4:30-50). As such, it is submitted that the exact ratio and amount of electrically conductive materials would have been optimized through routine experimentation.

Missling et al. does not teach venting volatiles through a vent in an extruder. However, vented extruders are well known in the molding art. At the time of invention a person of ordinary skill in the art would have found it obvious to have used vented volatiles through a vent in an extruder, as commonly practiced in the art, in the process of Missling et al., and would have been motivated to do so in order to avoid bubbles from occurring in the extrudate.

Missling et al. does not teach a twin screw extruder. However, Chi et al. teach a twin screw extruder (4:1-30). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a twin screw extruder, as taught by Chi et al., in the process of Missling et al., and would have been motivated to do so because Chi et al. suggest that single and twin screws are equivalent and alternative means for mixing materials for electrodes.

Claims 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Missling et al. (US Pat. 6,589,299) in view of Chi et al. (US Pat. 6,368,365) and McAleavey (US Pat. 5,482,587).

Missling et al. teaches the basic claimed process as set forth above regarding claim 17.

Missling et al. does not teach cooling rolls to a temperature of about -5 to -30°C. However, McAleavey teaches cooling rolls to a temperature sufficient to solidify the extrudate(5:10-65 and Figs. 1-3, element 67). It is submitted that process temperatures are result effective variable and routinely determined by routine experimentation and optimization. At the time of invention a person of ordinary skill in the art would have found it obvious to have used cooled rolls to a temperature sufficient to solidify the extrudate, as taught by McAleavey, in the process of Missling et al., and would have been motivated to do so in order to provide a solidified sheet/film.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-30 and 67-74 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 29 and 31 of copending Application No. 10/902,174 in view of Missling et al. (US Pat. 6,589,299) and McAleavey (US Pat. 5,482,587).

Claims 29 and 31 of copending Application No. 10/902,174 substantially teach the instantly claimed process of forming an electrode in the shape of film/sheet of less than 125 microns. Missling et al. (US Pat. 6,589,299) teaches the claims ingredients and amounts as set forth above. Similarly, McAleavey (US Pat.

5,482,587) teaches the used of chilled rollers as set forth above. The motivation to combine each of these references is that they all teach equivalent and alterative means of forming an electrode.

Claims 29 and 31 of copending Application No. 10/902,174 do not teach venting volatiles through a vent in an extruder. However, vented extruders are well known in the molding art. At the time of invention a person of ordinary skill in the art would have found it obvious to have used vented volatiles through a vent in an extruder, as commonly practiced in the art, in the process of claims 29 and 31 of copending Application No. 10/902,174, and would have been motivated to do so in order to avoid bubbles from occurring in the extrudate.

This is a provisional obviousness-type double patenting rejection.

Claims 1-30 and 67-74 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 30-31 and 34-39 of copending Application No. 10/382,539 in view of Missling et al. (US Pat. 6,589,299).

Claims 30-31 and 34-39 of copending Application No. 10/382,539 substantially teach the instantly claimed process of forming an electrode in the shape of film/sheet, using a single or twin screw extruder, of less than 125 microns and shaping between chilled roller. Missling et al. (US Pat. 6,589,299) teaches the claims ingredients and amounts as set forth above. The motivation to combine these references is that they all teach equivalent and alterative means of forming an electrode.

Claims 30-31 and 34-39 of copending Application No. 10/382,539 do not teach venting volatiles through a vent in an extruder. However, vented extruders are well known in the molding art. At the time of invention a person of ordinary skill in the art would have found it obvious to have used vented volatiles through a vent in an extruder, as commonly practiced in the art, in the process of claims 30-31 and 34-39 of copending Application No. 10/382,539, and would have been motivated to do so in order to avoid bubbles from occurring in the extrudate.

This is a provisional obviousness-type double patenting rejection.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Eashoo, Ph.D. whose telephone number is (571) 272-1197. The examiner can normally be reached on 7am-3pm EST, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark Eashoo, Ph.D.
Primary Examiner
Art Unit 1732

October 27, 2006
me

27/Oct/06